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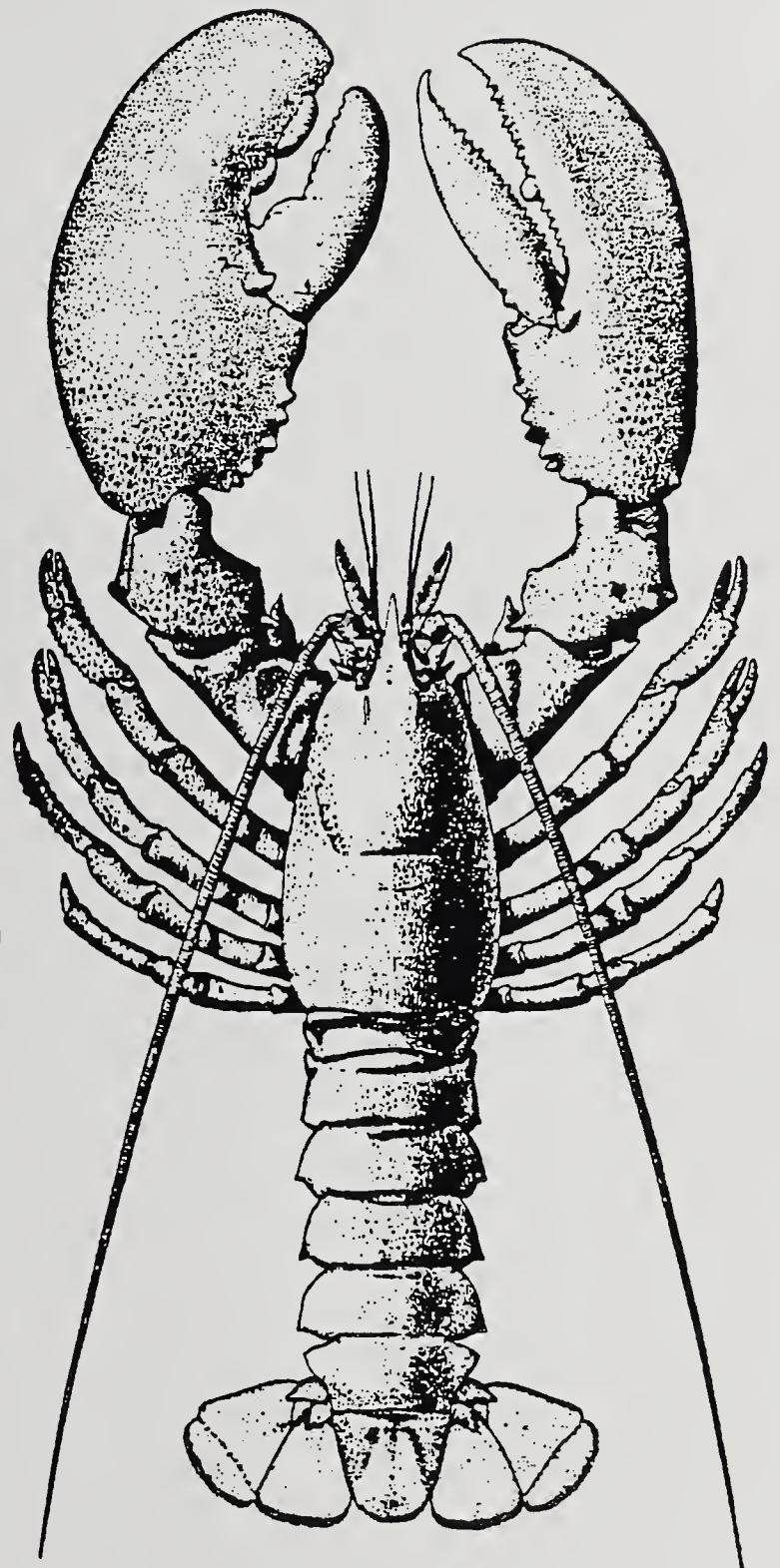
1998

Massachusetts Lobster Fishery Statistics

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Thomas B. Hoopes

Karen Kruger



MASSACHUSETTS
DIVISION OF MARINE FISHERIES

1998
**MASSACHUSETTS
LOBSTER FISHERY
STATISTICS**

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David M. Peters, Commissioner
Division of Marine Fisheries
Philip G. Coates, Director

INTRODUCTION

The commercial lobster fishery of Massachusetts is the most economically important fishery conducted within the territorial waters of the Commonwealth. The overall importance of the fishery both in New England and, in recent years, the Mid-Atlantic states, has focused the attention of federal, regional and state fishery managers on this species. In the early 1970's, in an attempt to standardize management of the fishery, the federal and state governments developed an overall lobster fishery management plan under the auspices of the State-Federal Fisheries Management Program. However, with the passage of the Magnuson Fishery Conservation and Management Act in 1976, the New England Fisheries Management Council, in cooperation with the Mid-Atlantic Council, developed and implemented a management plan for the entire Atlantic Coast lobster fishery. The basis and success of any such plan is an accurate statistical database. The Commonwealth of Massachusetts, with funding from the National Marine Fisheries Service, has been collecting annual reports from licensed lobster fishermen since the early 1960's. In the past these data were used primarily for descriptive and informational purposes, and occasionally for management. With the more recent emphasis on Federal management, however, these data have provided the respective management agencies with the information they need to protect the interests of Massachusetts' lobstermen and ensure a productive fishery in the Commonwealth.

During the period 1975 - 1980, the number of coastal commercial lobster permits was limited by law to 1300, with an additional ten percent issued to proven hardship cases each year. In 1981, a statutory change mandated the establishment of a permanent waiting list from which 100 new permits were issued. Thirty special additional permits were also awarded to full-time commercial fishermen who met certain criteria. From 1982 to 1987, 80 list permits and 20 special additional permits were issued each year. In 1988, the issuance of new coastal permits was suspended. From 1988 to 1993, license transfers were allowed only within the immediate family, and if a license was allowed to expire, it was retired. In early 1993, a new regulation was promulgated by the DMF establishing broader eligibility criteria and new procedures for the transfer of Coastal Commercial Lobster Permits. As a result of these measures, the number of permits has declined from an all time high of 1,865 in 1988 to a more manageable 1,570 licenses today. The new system has also allowed for more orderly turnover in the industry. The new transfer procedures provide for transfer to employees (captains, deck hands, etc.) and persons on an established waiting list in addition to transfers within the immediate family. Only those licenses that have been actively fished for four out of the past five years according to catch reports filed with the Division may be transferred. The person to whom the permit is transferred must prove that he/she has at least one year of experience in the commercial lobster pot fishery or two years of experience in commercial fishing. All transferees must be owner/operators of the new business. Transfer activity for calendar year 1998 is described on Page 2.

This report is the thirty-second annual publication of data compiled from the catch reports of licensed lobster fishermen. Data were presented in a standardized format through 1979. In 1980, the presentation was enhanced as a result of improved collection and analysis methods. This publication represents the thirteenth year in which the data processing and analysis have been completely automated. Areal data presented in this report conform to the National Marine Fisheries Service statistical reporting areas. This report does not, however, cover the scope of the Project's existing database and computational capability. Requests for expanded information, or questions concerning this publication, should be directed to the Division's Statistics Project in Gloucester, MA: (978) 282-0308.

This report has been prepared by personnel of the Division of Marine Fisheries Information Systems and Fisheries Statistics Project, funded jointly by the Commonwealth and the National Marine Fisheries Service under the Interjurisdictional Fisheries Act (Public Law 99-659). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their annual reports. Special thanks go to Ann Spires who continues, year after year, to interpret and keypunch, with special care and accuracy, the type of reports that fishermen are likely to fill out. Thanks also go to Charlie Anderson, who heads up the project, for his help with system development and upgrades and for his suggestions concerning this publication. These two people are as important to this process as we are, and without them this publication would not be possible. The authors also wish to acknowledge the assistance of Bruce Estrella from our Lobster Biology Project and Eileen Feeney and Kevin Creighton from our permitting office.

SOURCE OF DATA

"No person may fish for or take lobster in coastal waters or land lobster in the Commonwealth without a permit issued by the Director of the Division of Marine Fisheries." (Chapter 130, Mass. G.L., Section 38). Chapter 130, Mass. G.L., Section 33, requires any person so licensed to file an annual report of their catch by January 31 for the preceding calendar year. In 1980, a dual reporting system was established. Commercial lobstermen (coastal, offshore and seasonal(student)) received a detailed catch report form with their license renewal application. This report requests the following information: method of fishing; number and type of gear used; effort data (set-over days, number of trips per month, etc.); pounds of lobster caught; areas fished; principal ports of landing; and information relative to the vessels and traps used in the fishery. Recreational fishermen are asked to report on their license renewal application form the number of lobsters taken during the previous year and the maximum number of traps fished. Project personnel sort, edit, tabulate and interpret data from all reports received. Data presented in this publication are based on catch reports actually received as of September 13, 1999 and are not expanded to represent all of the permits issued in 1998.

COASTAL LOBSTER LICENSE TRANSFER

During 1993, the Division promulgated regulations to broaden the criteria for the transfer of a coastal lobster license from one individual to another. The intent of the new legislation was to create more options for lobstermen who wish to retire and leave this limited entry fishery. During calendar year 1998, the Division authorized the transfer of 48 coastal lobster licenses. Twenty-two of the transfers went to 'captains' who were previously authorized to fish another holder's license and who had fished that holder's license for at least twelve months prior to transfer. Nine transfers were allowed within the holder's immediate family (and would also have been allowed prior to the new regulation). Eight transfers were made directly from the holder to a sternman with a documented fishing history. Nine lobstermen advertised their coastal lobster businesses to persons on a waiting list maintained by the Division and subsequently transferred their permits. Twenty-five licenses were forfeited to the Division in 1998; twelve of these coastal lobster permits were issued directly to waiting list applicants, and the remaining thirteen licenses were permanently retired.

EXPLANATION OF TABLES

All data presented in this publication are broken down into two basic categories: the first is **"territorial"** which represents data pertaining to all lobstering activity taking place within the territorial waters (3 mile line) of the Commonwealth (Areas 1-14 on Figure 1A); the second is **"non-territorial"** which represents all data beyond those waters (Areas 15-25 on Figure 1B). In 1990, the statistical reporting map was revised to reflect the territorial / non-territorial breakdown and to conform to the National Marine Fisheries Service's statistical reporting areas. Figures 1A and 1B show the statistical reporting areas used by the Division to collect most commercial fisheries data in the Commonwealth.

Figure 1A. 1998 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Territorial Waters and Outlying Areas

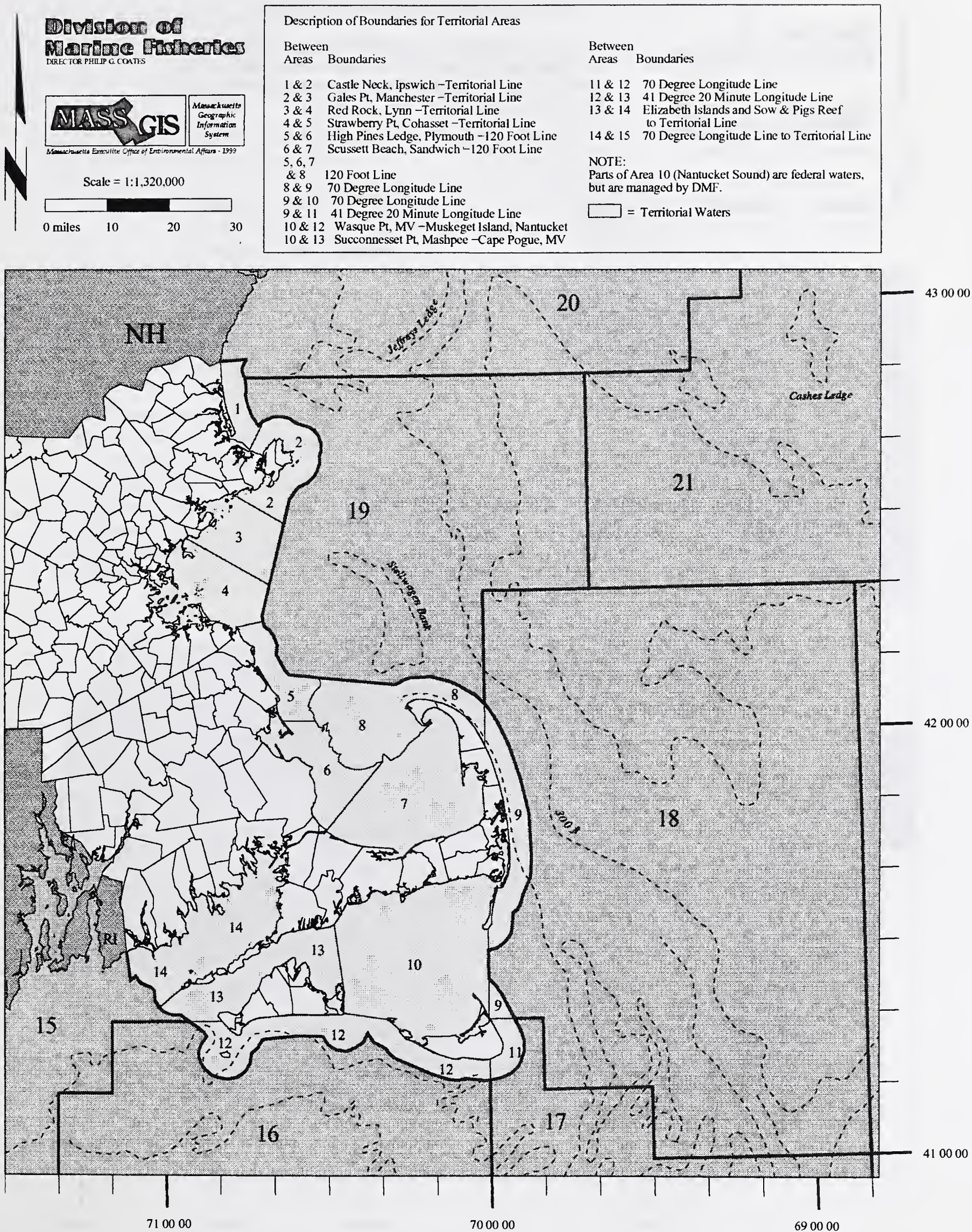
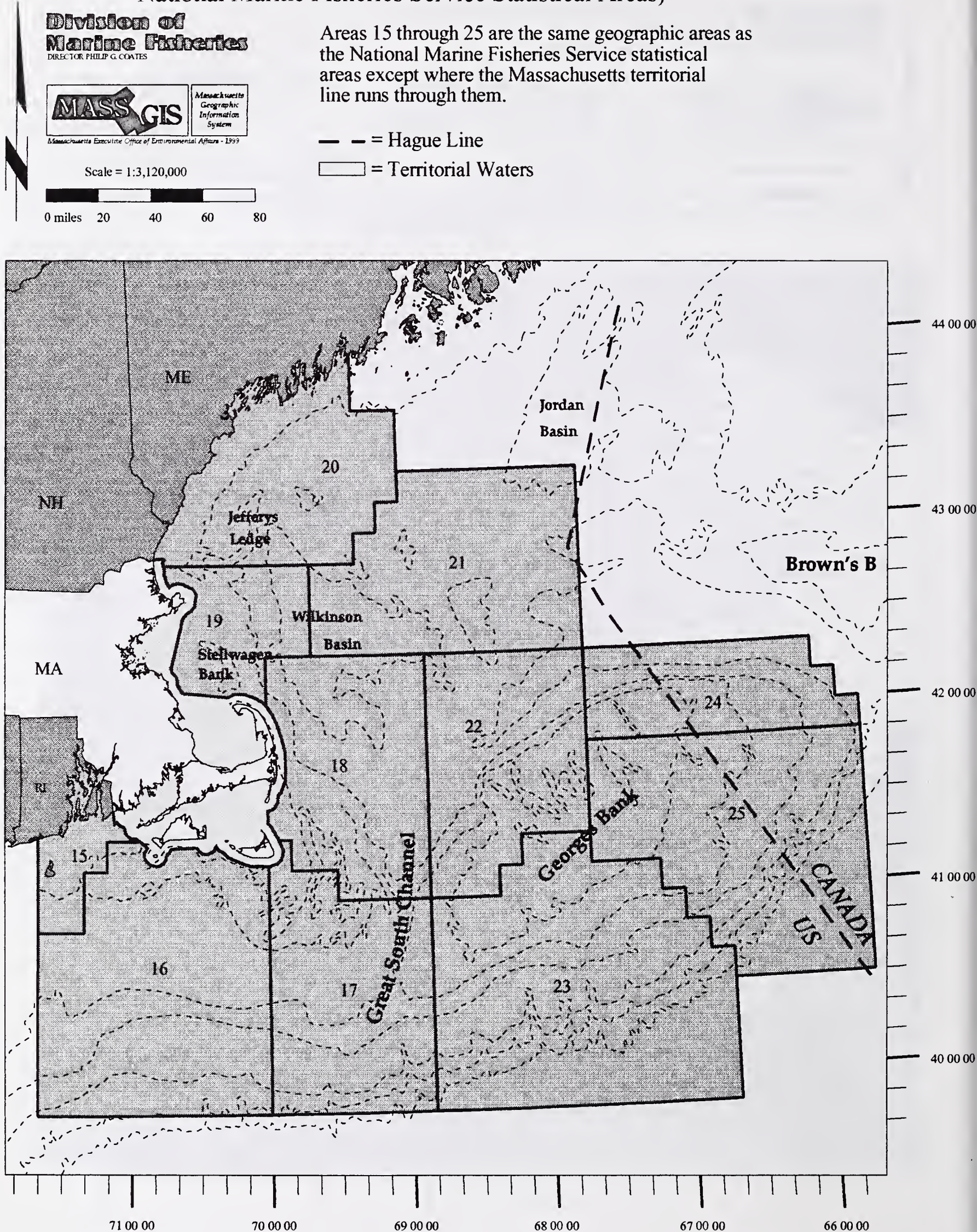


Figure 1B. 1998 Massachusetts Lobster Fishery; Statistical Reporting Map Showing Offshore Areas (which correspond to the National Marine Fisheries Service Statistical Areas)



Here is a brief definition of each lobster license type:

Coastal Commercial: Allows the holder to harvest lobster anywhere, most importantly inside territorial waters.

Offshore Commercial: Allows the holder to harvest lobster outside territorial waters only.

Seasonal Commercial: Allows the holder, if he or she is a student, to harvest lobster anywhere, but with a maximum of 25 traps and only during the months of June - September.

Non-commercial: Allows the holder to harvest lobster anywhere using SCUBA gear, a maximum of 10 traps, or a combination of both. The catch may not be sold.

Regulations promulgated by the New England Fishery Management Council in cooperation with the major lobster harvesting states of the Atlantic Coast, declared 1990 the "off-year" of a 5-year program to increase the minimum legal size from 3 3/16 in 1987 to 3 5/16 inches by January of 1992 through four 1/32 inch increases. The program was suspended at the end of 1990 and the planned increases in 1991 and 1992 were delayed pending a study of the economic impact of the program. The gauge increase program has not resumed and has been superseded by a proposed amendment to the lobster Fishery Management Plan to control fishing effort without a gauge increase.

Tables presenting number of fishermen, number of pots fished, number and value of boats used in the fishery and total landings statewide, by county and license type, and for each city and town were prepared using the catch reports submitted by commercial fishermen. In keeping with Division policy, some of the data are masked or combined to protect the confidentiality of the individual submitting the report. Data referring to the number of fishermen, number and value of gear, and number and value of boats are presented by the home port of the licensee filing the report. Pounds of lobster harvested are presented by the port of landing reported by the fishermen.

Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of the time it is in use specifically for lobstering. Average values were used when the information was omitted from an individual report. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.27 pounds per lobster was used to calculate poundage figures. This figure is based on information collected by the Division's Coastal Lobster Investigations Project. For information on biological (average carapace length, sex ratios, percent of egg-bearing lobster in catch etc.) and other parameters (mortality, exploitation and catch per unit of effort rates) contact this Project in Pocasset, MA at (508) 563-1779.

Where tables refer to county, the reader is referred to Figure 10.

ISSUED LICENSES AND REPORTING STATUS

Table 1 lists the number of commercial and recreational licenses issued in 1998, the dollar value of fees collected and the number that reported catching lobster. There were 2,181 commercial lobster licenses issued during 1998: 1,570 coastal, 529 offshore and 82 seasonal. Non-commercial licenses issued totaled 11,454; a breakdown of their reporting status and landings can be found in Table 6.

As of September 13, 1999, a total of 122 licensed commercial lobstermen (5.5 percent) failed to file a catch report with the Division. Of the 2,059 commercial fishermen who reported, 507 or 24.5 percent claimed they did not catch any lobster during 1998. The number of coastal licenses issued continues to decline since a 1988 moratorium on the issuance of new licenses. An annual decrease of approximately two percent per year continued in 1998 driven by fishermen leaving the fishery and the Division's policy to retire half of these licenses through attrition.

The number of offshore licenses issued decreased slightly in 1998. Overall compliance with catch reporting by the offshore fleet appears to be improving. Student commercial licenses increased by approximately 26 percent over last year.

Table 1. 1998 Massachusetts Lobster Fishery; Reporting Status of Licenses Issued

<u>License Type (Fee)</u>	<u>Licenses Issued</u>	<u>Licensing Revenue</u>	<u>Reported "Catching Lobster"</u>		<u>Reported "No Lobster Catch"</u>		<u>Not Reporting</u>	
Coastal Commercial (\$260)	1,570	\$408,200	1,161	74%	385	25%	24	2%
Offshore Commercial (\$260)	529	\$137,540	350	66%	115	22%	64	12%
Seasonal (Student) Commercial (\$65)	82	\$5,330	41	50%	7	9%	34	41%
Non-Commercial (\$40)	11,454	\$458,160	7,012	61%	1,988	17%	2,454	21%
Total	13,635	\$1,009,230	8,564	63%	2,495	18%	2,576	19%

Table 2. Massachusetts Commercial Lobster Fishery; Selected Licensing Information, 1994 - 1998

	1994	1995	1996	1997	1998	Percent Five Year Change
Coastal Licenses						
Issued	1,612	1,609	1,598	1,591	1,570	-2.61%
% Change		-0.19	-0.68	-0.44	-1.32	
"Caught Lobster"	1,194	1,190	1,179	1,162	1,161	
% Change		-0.15	-0.24	-1.01	1.25	
"Did Not Catch Lobster"	401	403	404	407	385	
% Change		0.69	0.94	1.19	-4.14	
Not Reporting	17	16	15	22	24	
% Change		-5.71	-5.60	47.31	10.55	
Percent Not Reporting	1.1%	1.0%	0.9%	1.4%	1.5%	
Offshore Licenses						
Issued	648	596	551	554	529	-18.36%
% Change		-8.02	-7.55	0.54	-4.51	
"Caught Lobster"	480	439	400	354	350	
% Change		-0.56	-1.44	-11.98	3.54	
"Did Not Catch Lobster"	119	117	114	117	115	
% Change		6.90	5.39	2.08	2.94	
Not Reporting	49	49	37	83	64	
% Change		8.72	-18.32	123.11	-19.25	
Percent Not Reporting	7.6%	8.2%	6.7%	15.0%	12.1%	
Seasonal (Student) Licenses						
Issued	89	82	65	78	82	-7.87%
% Change		-7.87	-20.73	20.00	5.13	
"Caught Lobster"	49	42	40	39	41	
% Change		-6.97	-4.76	-2.50	5.13	
"Did Not Catch Lobster"	15	12	7	6	7	
% Change		-13.17	-41.67	-14.29	16.67	
Not Reporting	25	28	18	33	34	
% Change		21.56	-35.71	18.00	3.03	
Percent Not Reporting	28.1%	34.1%	27.7%	42.3%	41.5%	

Note: All annual percentage changes are normalized to the number of licenses issued for each license type in each year.

LANDINGS AND VALUE

In 1998, 13,236,091 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 12.30 percent decrease from 1997. Based on an average price of \$3.62 per pound, the commercial catch was valued at \$47,914,649 a 2.61 percent decrease from 1997. Figure 2. shows the weighted ex-vessel price for 1998 as derived from audits of lobstermen's records. The weighted average price of \$3.62 rose 11.04 percent over the average ex-vessel price paid in 1997. (Weighted price means that each price is weighted by the number of pounds that were paid at that price instead of taking a flat average of all prices).

Of the 13,236,091 pounds of lobster landed commercially, 7,660,274 were reported taken within the territorial waters of the Commonwealth. In total pounds of lobster landed, Essex County continues to be ranked first, Plymouth County second and Bristol County third. See Table 3 for a breakdown of pounds landed and number of fishermen by license type and county and Table 4 for a five-year comparison of selected landings and effort statistics.

Gloucester was the number one port in total pounds landed followed by Marshfield, Fairhaven and New Bedford in that order. In total numbers of active commercial fishermen, Essex County ranked first with 539, Plymouth County second with 318 and Bristol County third with 249. Among the cities and towns of the Commonwealth, Gloucester ranked first in active fishermen followed by New Bedford, Plymouth and Marshfield in that order. See Tables 3 and 5, (the shaded areas in Table 5 refer to the top 10 cities in at least one of the two categories: pounds landed and number of fishermen).

Figure 2. 1998 Massachusetts Commercial Lobster Fishery
Weighted Ex-Vessel Price Derived from Audited Lobstermen's Records

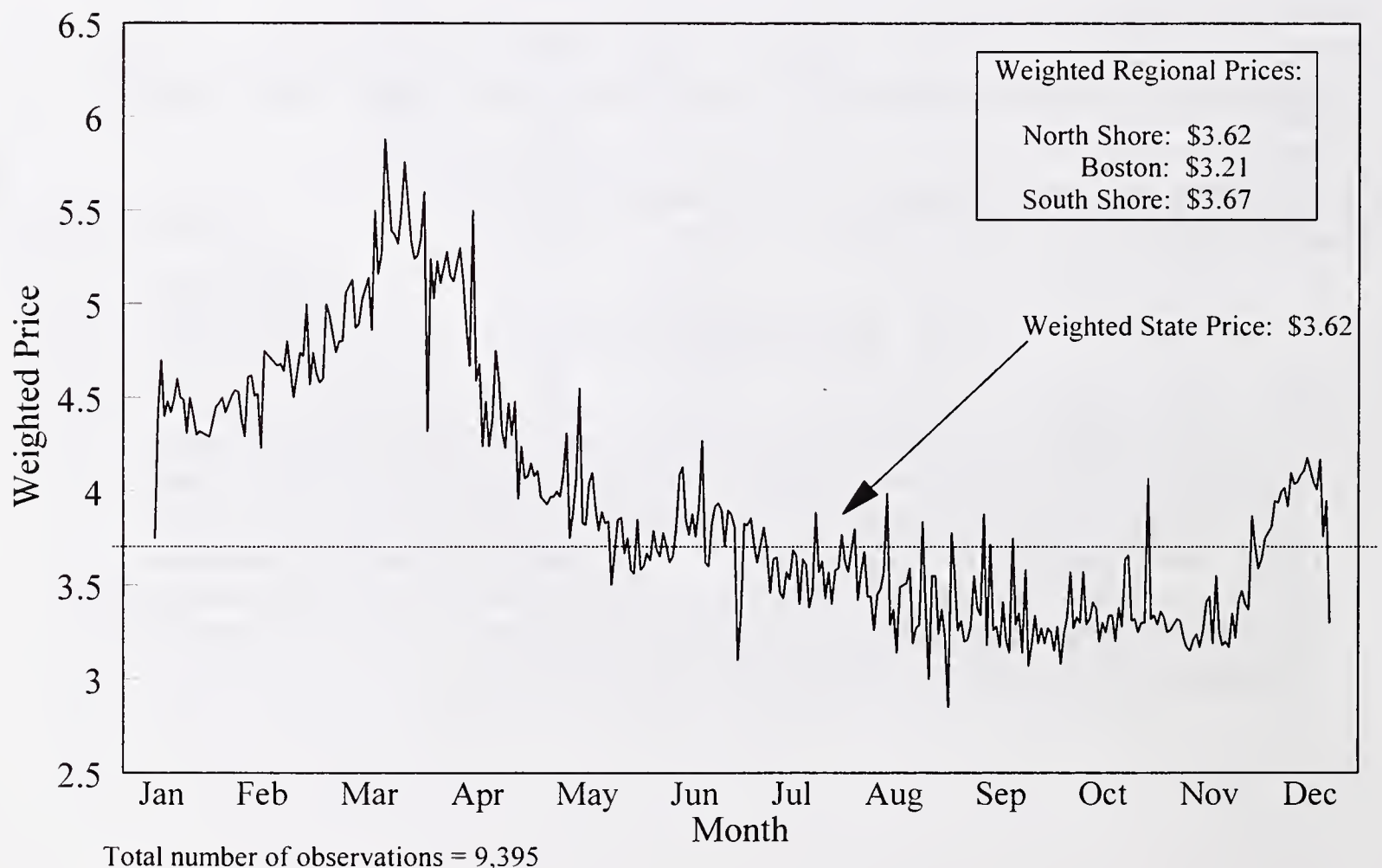


Table 3. 1998 Massachusetts Commercial Lobster Fishery; Number of Fishermen, Harvest (Lbs.) and Value of Harvest

AREA:		TERRITORIAL (Areas 1 - 14)				NON-TERRITORIAL (Areas 15 - 25)				GRAND * TOTAL		
LICENSE TYPE: GEAR TYPE:		----- COASTAL -----			TOTAL * TERRITORIAL	---- COASTAL ---- Trawl/ Gillnet			TOTAL NON- TERRITORIAL			
		Diver	Potman	Potman/ Diver		Trawl/ Gillnet	Potman	Trawl/ Gillnet			Potman	Trawl/ Gillnet
-- COUNTY -- <i>BARNSTABLE</i>	Fishermen		146	7	8	164 +	19	33	7	59	223	
	Pounds		988,557	54,945	1,570	1,053,058	346,916	34,859	637,902	1,019,677	2,072,735	
	Value (\$)		3,578,576	198,901	5,683	3,812,070	1,255,836	126,190	2,309,205	3,691,231	7,503,301	
<i>BRISTOL</i>	Fishermen		70			72 +	15	142	20	177	249	
	Pounds		532,493			532,778	598,544	314,023	835,279	1,747,846	2,280,624	
	Value (\$)		1,927,625			1,928,656	2,166,729	1,136,763	3,023,710	6,327,203	8,255,859	
<i>DUKES</i>	Fishermen		24			28 +	6		6	14 +	42	
	Pounds		108,354			109,752	88,126		29,599	118,549	228,301	
	Value (\$)		392,241			397,302	319,016		107,148	429,147	826,450	
<i>ESSEX</i>	Fishermen		377	11	16	409 +	54	64	11	130 +	539	
	Pounds		2,776,835	48,331	4,685	2,833,846	1,432,089	134,419	259,403	1,842,130	4,675,976	
	Value (\$)		10,052,143	174,958	16,960	10,258,523	5,184,162	486,597	939,039	6,668,511	16,927,033	
<i>NANTUCKET</i>	Fishermen		6			9 +				2 +	11	
	Pounds		13,103			13,553				45,701	59,254	
	Value (\$)		47,433			49,062				165,438	214,499	
<i>NORFOLK</i>	Fishermen		47			47 +				2 +	49	
	Pounds		307,237			307,237				65,330	372,567	
	Value (\$)		1,112,198			1,112,198				236,495	1,348,693	
<i>PLYMOUTH</i>	Fishermen		252	8	7	270 +	28	13		48 +	318	
	Pounds		2,259,775	17,568	1,142	2,282,165	527,693	3,687		543,867	2,826,032	
	Value (\$)		8,180,386	63,596	4,134	8,261,437	1,910,249	13,347		1,968,799	10,230,236	
<i>SUFFOLK</i>	Fishermen		64			65 +				22 +	87	
	Pounds		519,307			519,382				121,294	640,676	
	Value (\$)		1,879,891			1,880,163				439,084	1,608,097	
<i>STATE TOTAL *</i>	Fishermen	8	986	26	38	1,064	125	7	47	454	1,518	
	Pounds	8,957	7,505,661	120,844	9,220	7,651,771	3,123,050	20,565	1,764,218	5,504,394	13,156,165	
	Value (\$)	32,424	27,170,493	437,455	33,376	27,699,411	11,305,441	74,445	6,386,469	19,925,906	47,625,317	
<i>OUT OF STATE</i>	Fishermen					+				+	9	
	Pounds					8,503				71,422	79,925	
	Value (\$)					30,781				258,548	289,329	

* + Row and column totals may not equal the sum of the rows or columns due to masking of the data.

Value is based on an ex-vessel price of \$3.62, see Figure 2.

**Table 4. Massachusetts Commercial Lobster Fishery;
Selected Landings (Lbs.) and Effort Statistics, 1994-98**

	1994	1995	1996	1997	1998	Percent Five Year Change
Total Landings	16,174,818	15,949,362	15,361,045	15,092,015	13,236,091	-18.17
Percent Change		-1.39	-3.69	-1.75	-12.30	
Total Traps Fished	488,945	482,180	495,651	489,907	505,048	3.29
Percent Change		-1.38	2.79	-1.16	3.09	
Total Value	\$47,068,720	\$51,037,958	\$50,077,007	\$49,199,969	\$47,914,649	1.80
Percent Change		8.43	-1.88	-1.75	-2.61	
TERRITORIAL (Inside 3 Miles)						
Landings	10,498,316	10,040,721	9,109,902	8,434,199	7,660,274	-27.03
Percent Change		-4.36	-9.27	-7.42	-9.18	
Value	\$30,550,100	\$32,130,307	\$29,698,281	\$27,495,489	\$27,730,192	-9.23
Percent Change		5.17	-7.57	-7.42	0.85	
Trap Landings	10,430,833	10,027,563	9,076,886	8,419,590	7,641,958	-26.74
		-3.87	-9.48	-7.24	-9.24	
Traps Fished	365,821	358,075	366,946	351,639	368,451	0.72
		-2.12	2.48	-4.17	4.78	
Non-Trap Landings (Gillnet, Diver)	40,583	13,158	33,016	14,609	18,316	-54.87
		-67.58	150.92	-55.75	25.37	
NON-TERRITORIAL (Outside 3 Miles)						
Landings	5,676,502	5,908,641	6,251,143	6,657,816	5,575,816	-1.77
Percent Change		4.09	5.80	6.51	-16.25	
Value	\$16,518,621	\$18,907,651	\$20,378,726	\$21,704,480	\$20,184,454	22.19
Percent Change		14.46	7.78	6.51	-7.00	
Trap Landings	4,634,960	4,994,645	5,331,921	6,038,239	4,925,368	6.27
		7.76	6.75	13.25	-18.43	
Traps Fished	123,124	124,106	128,704	138,267	136,596	10.94
		0.80	3.70	7.43	-1.21	
Non-Trap Landings (Gillnet, Trawler)	1,041,542	913,996	919,222	619,577	650,448	-37.55
		-12.25	0.57	-32.60	4.98	
Average Price (\$) / Pound	2.91	3.2	3.26	3.26	3.62	
Percent Change		9.97	1.87	0.00	11.04	
Ave. Lbs. / Trap-Haul	0.6976	0.7286	0.7296	0.7721	0.6667	
Percent Change		4.44	0.14	5.83	-13.65	
Ave. Lbs. / Trap	30.81	31.15	29.07	29.51	24.88	
Percent Change		1.12	-6.69	1.52	-15.68	

Table 5. 1998 Massachusetts Commercial Lobster Fishery
Number of Active Commercial Fishermen and Landings by Homeport
Does Not Include Seasonal Licenses

TOWN	FISHERMEN NUMBER	RANK	POUNDS TERRITORIAL	POUNDS NON- TERRITORIAL	TOTAL POUNDS	PERCENT	RANK
BARNSTABLE-YARMOUTH	10	27	62,483	447,298	509,780	3.87	8
BEVERLY-DANVERS-SALEM	52	8	334,915	161,724	496,639	3.77	9
BOSTON	61	6	319,709	110,726	430,435	3.27	12
BOURNE	8	29	18,910	70	18,980	0.14	39
CHATHAM-HARWICH	56	7	188,282	219,082	407,364	3.10	13
CHILMARK	21	19	110,811	114,302	225,112	1.71	19
COHASSET	36	13	296,481	56,281	352,762	2.68	15
DARTMOUTH-FREETOWN	8	29	11,973	0	11,973	0.09	41
DENNIS-BREWSTER	19	21	67,141	714	67,855	0.52	29
DUXBURY	10	27	49,183	0	49,183	0.37	33
ESSEX	4	32	336	0	336	0.00	45
FAIRHAVEN	40	11	221,043	646,257	867,300	6.59	3
FALMOUTH-GOSNOLD	15	23	41,703	23,034	64,737	0.49	31
GLOUCESTER	218	1	915,109	1,264,974	2,180,083	16.57	1
HINGHAM	17	22	197,853	36,633	234,486	1.78	18
HULL	31	14	206,018	68,153	274,170	2.08	16
IPSWICH-ROWLEY	20	20	29,008	0	29,008	0.22	35
KINGSTON	4	32	27,107	0	27,107	0.21	37
LYNN	6	31	13,289	51,805	65,094	0.49	30
MANCHESTER	25	16	181,903	25,844	207,747	1.58	21
MARBLEHEAD	44	9	307,648	82,390	390,038	2.96	14
MARSHFIELD	74	4	738,444	160,090	898,534	6.83	2
MATTAPOISETT	12	25	66,576	12,655	79,231	0.60	26
NAHANT	21	19	156,804	34,443	191,247	1.45	23
NANTUCKET	9	28	13,398	45,701	59,098	0.45	32
NEW BEDFORD	166	2	255,732	576,811	832,543	6.33	4
NEWBURYPORT-NEWBURY	23	17	58,451	11,616	70,067	0.53	28
ORLEANS-EASTHAM	23	17	110,375	27,439	137,814	1.05	25
PLYMOUTH	91	3	704,630	42,066	746,696	5.68	5
PROVINCETOWN	37	12	190,966	13,536	204,502	1.55	22
QUINCY	7	30	6,079	5,606	11,685	0.09	42
REVERE	12	25	129,678	105,567	235,245	1.79	17
ROCKPORT	64	5	413,050	79,193	492,243	3.74	10
SALISBURY	6	31	7,252	2,575	9,827	0.07	43
SANDWICH	44	9	339,062	287,062	626,124	4.76	6
SAUGUS	26	15	198,373	18,395	216,768	1.65	20
SCITUATE-NORWELL	61	6	256,557	224,270	480,826	3.65	11
SWAMPSCOTT	22	18	154,833	14,178	169,011	1.28	24
TISBURY-EDGARTOWN-OAK BLUFFS	13	24	22,353	3,688	26,041	0.20	38
TRURO	8	29	16,056	2,000	18,056	0.14	40
WAREHAM-MARION	11	26	35,778	0	35,778	0.27	34
WELLFLEET	4	32	28,825	0	28,825	0.22	36
WESTPORT-SWANSEA-FALL RIVER	41	10	72,677	524,777	597,454	4.54	7
WEYMOUTH	6	31	4,677	3,443	8,120	0.06	44
WINTHROP	15	23	70,245	0	70,245	0.53	27
STATEWIDE TOTAL	1,501		7,651,771	5,504,393	13,156,164	100.00	
OUTOFSTATE	9		8,503	71,423	79,926		

Shaded areas denote towns which rank in the top 10 for number of fishermen or total landings or both.

RECREATIONAL LOBSTER FISHERY

Recreational statistics are shown in Table 6. Licenses issued in 1998 totaled 11,454, up slightly from 1997, with 9,000 or 78 percent, reporting that they fished for lobster. In general, reporting rates dropped slightly and the percentage of license holders fishing increased. Landings decreased by approximately 1.4 percent from 1997. The number of traps fished in the recreational fishery has risen steadily for the past few years. The number of hours dived has continued to decline from 1993 levels. Landings amounted to 329,444 pounds or only 2.5 percent of the commercial landings. It should be noted that those individuals who did not report, were not able to renew their recreational license for 1998. Twenty-one percent of the licenses in the recreational fishery have turned over in the past year; historically, this turn-over rate is not unusual.

Table 6. 1998 Massachusetts Recreational Lobster Fishery; License Status and Harvest Information

<u>License Type:</u>	<u>Diver</u>	<u>Diver/Pot</u>	<u>Potman</u>	<u>Total</u>	<u>Percent</u>
1) Number of Licenses Issued in 1998	3,760	3,194	4,500	11,454	
2) Number That Reported	2,758	2,723	3,519	9,000	78.58%
a) Total Number That Fished	2,095	2,065	2,852	7,012	61.22%
b) Total Number That Did Not Fish	663	658	667	1,988	17.36%
3) Number That Did Not Report	952	620	980	2,454	21.42%
4) Number of Lobsters Reported Landed	39,789	72,343	147,273	259,405	Percent Change from 1997
Pounds of Lobsters (Calculated)*	50,532	91,876	187,037	329,444	-2.23%
5) Number Pots Fished		7,035	21,534	28,569	0.60%
6) Number of Hours Diving	30,850	25,351		56,201	-0.19%
* Based on 1.27 Pounds per Lobster.					

TERRITORIAL FISHERY

Territorial landings by commercial fishermen were concentrated in the months of July through November when 74 percent of the yearly harvest was landed. A typical yearly scenario is for catches to increase sometime in mid to late July and peak in August and September. Water temperatures rise during this time inducing growth and subsequent recruitment of previously sub-legal lobsters into the legal size category. The bulk of 1998 landings were distributed July through November with concentrated landings in September, October and November. Landings in 1997 reflected a more uniform distribution with concentrations August through October. See Table 7 and Figure 3.

The greatest harvest of lobster from territorial waters was from the Boston Harbor vicinity (including the outlying areas which comprise Area 4 on Figure 1A), where approximately 18.5% of the state's territorial harvest was caught.

Table 7. 1998 Massachusetts Commercial Lobster Fishery
Percent Monthly Territorial Harvest by License Type

Month	Coastal	Seasonal
January	2.02	0.00
February	0.97	0.00
March	1.09	0.00
April	3.01	0.00
May	4.25	0.00
June	6.16	17.43
July	12.51	37.96
August	12.12	33.24
September	17.09	11.37
October	15.32	0.00
November	16.76	0.00
December	8.69	0.00
Total	100.00	100.00

Figure 3. 1998 Massachusetts Commercial Lobster Fishery
Total Monthly Territorial Harvest for Coastal and Seasonal License Types

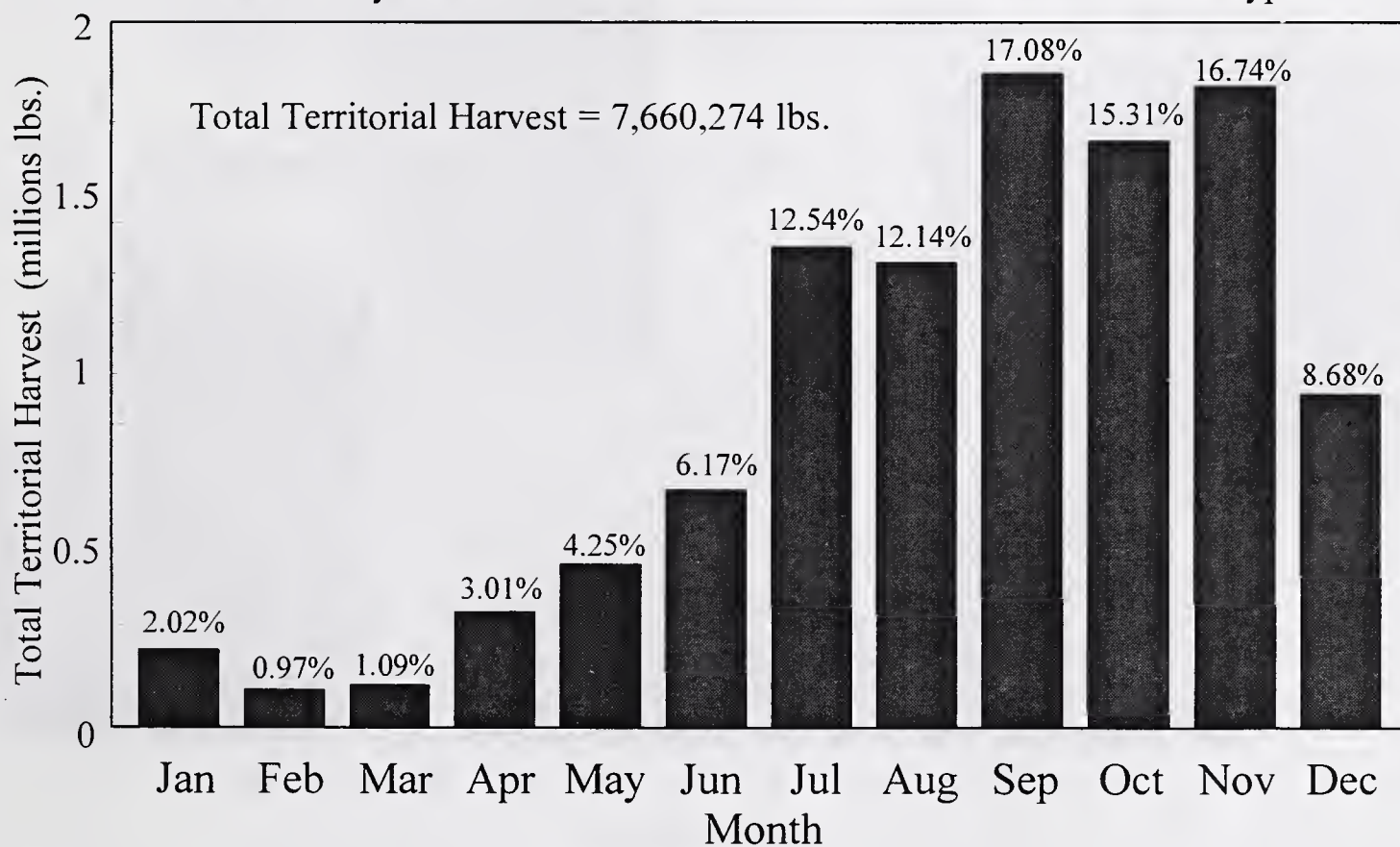


Table 8. 1998 Massachusetts Commercial Lobster Fishery
Percent Territorial Harvest by Area Fished by License Type

Area Fished	Coastal	Seasonal
1	6.94	5.29
2	16.22	38.23
3	11.59	7.93
4	18.52	0.00
5	9.17	4.79
6	7.50	12.87
7	5.26	2.64
8	10.39	0.00
9	3.64	0.00
10	0.63	11.81
11	0.00	0.00
12	1.42	0.00
13	3.59	12.77
14	5.13	3.67
Total Pounds	7,651,054	9,220

Territorial landings were down 9.2 percent in 1998. Although many areas including Boston Harbor saw notable decreases in their percentage share of territorial landings, a few areas, including Plum Island/Merrimac River and Buzzards Bay did show increases for the year. See Figure 1A for the map of fishing areas and Figure 4 and Table 8 for a complete breakdown by area for each license type and month.

Offshore license landings are not shown in Figures 3 and 4 because license holders of this type cannot harvest lobsters within territorial waters. Offshore landings are more evenly distributed during the year with offshore potmen landings peaking in autumn and mobile gear landings peaking in the winter months. Figure 5 shows the distribution of all lobster landings by statistical reporting area.

Figure 4. 1998 Massachusetts Commercial Lobster Fishery
Total Territorial Harvest for Coastal and Seasonal License Types by Area Fished

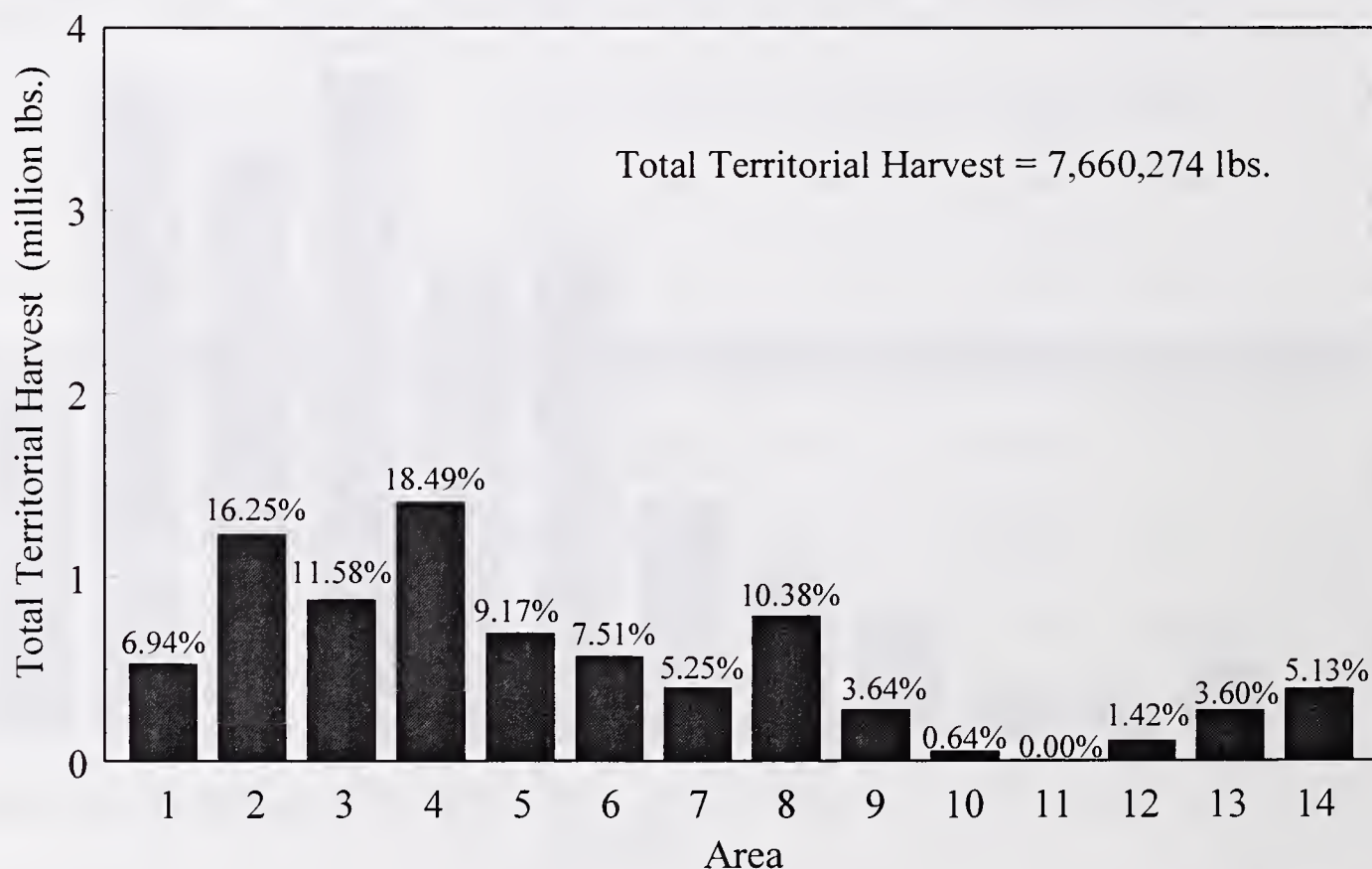
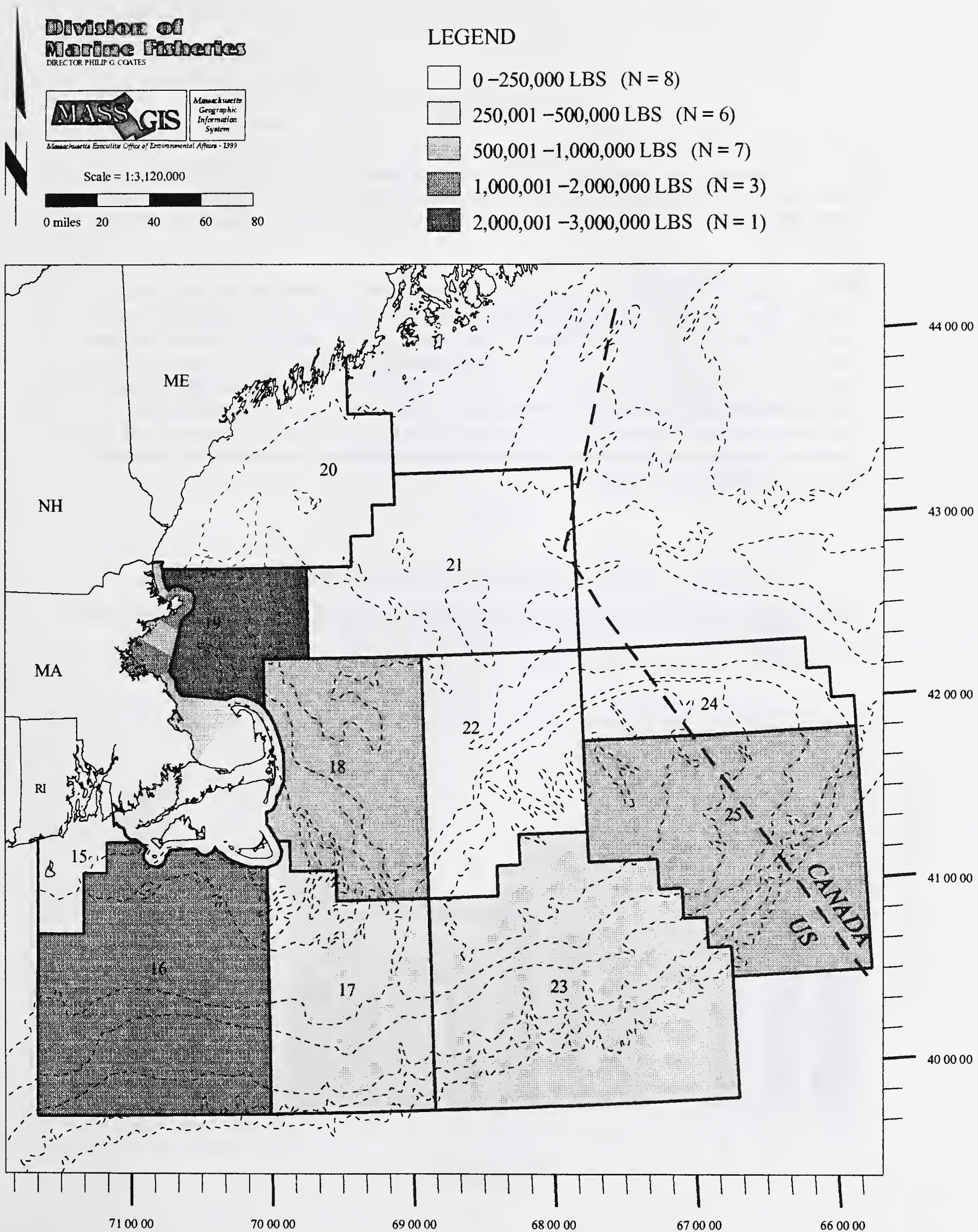


Figure 5. 1998 Massachusetts Lobster Fishery; Landings by Statistical Reporting Area –(See Figures 1A & 1B for References to Reporting Areas)



CATCH RATES

The average catch per trap haul for coastal lobstermen was .5971 pounds, a decrease from 1997. For traps fished one set-over day the average was, .2359; for those fished two days, .5071, for three days, .5312, and for four days, .6409. See Figure 6 for catch effort by set-over day.

Figures 7 and 8 show the average catch per trap-haul - set-over day for area fished and month, where set-over day is factored into the effort. The average catch per trap haul - set-over day for 1998 was .1683, a thirty-five percent decrease from 1997 and a eleven percent decrease from 1993. Overall these figures should be categorized as "estimates" since, in many cases, fishermen will estimate the number of traps hauled per trip for each month. If a fisherman leaves this information blank, the catch report is returned for corrections. If the combination of maximum traps, set-over days, average traps hauled per trip and number of trips per month is out of range for a particular month, the information is interpolated by Division statistics personnel and then factored into the analysis.

Figure 6. 1998 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort by Set-Over Day for Coastal Potmen and All Potmen

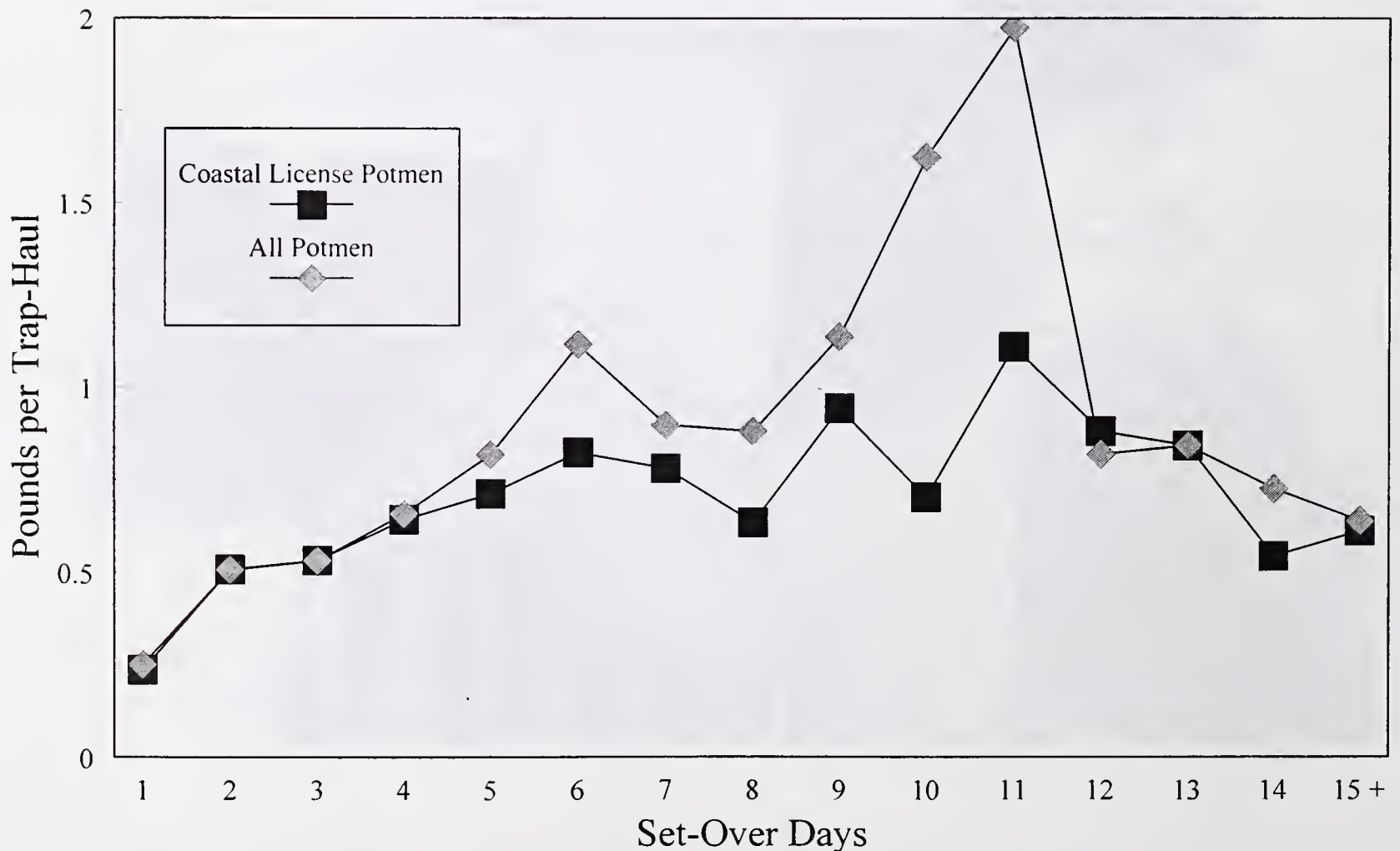


Figure 7. 1998 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for Coastal and All Potmen by Month

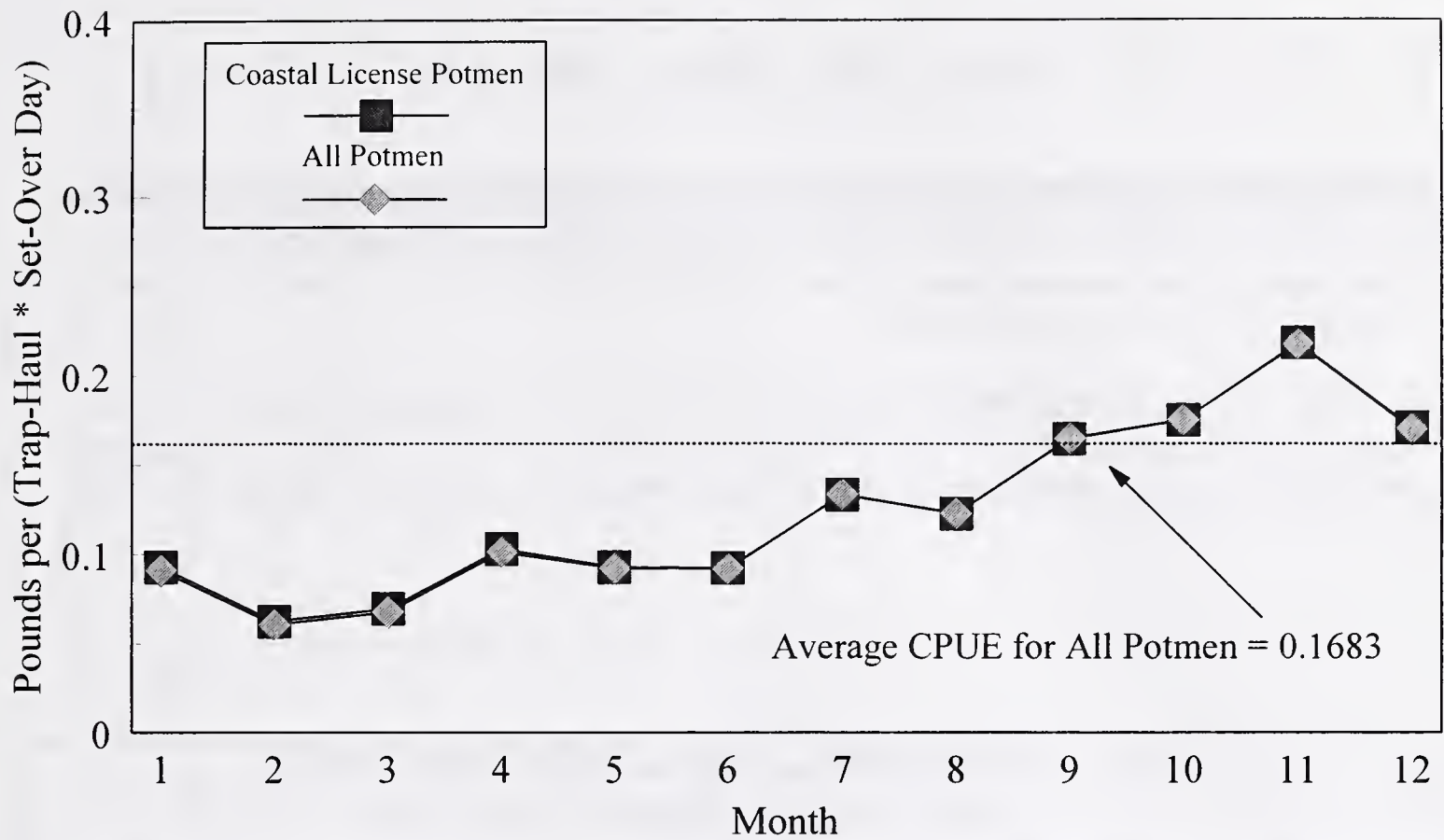
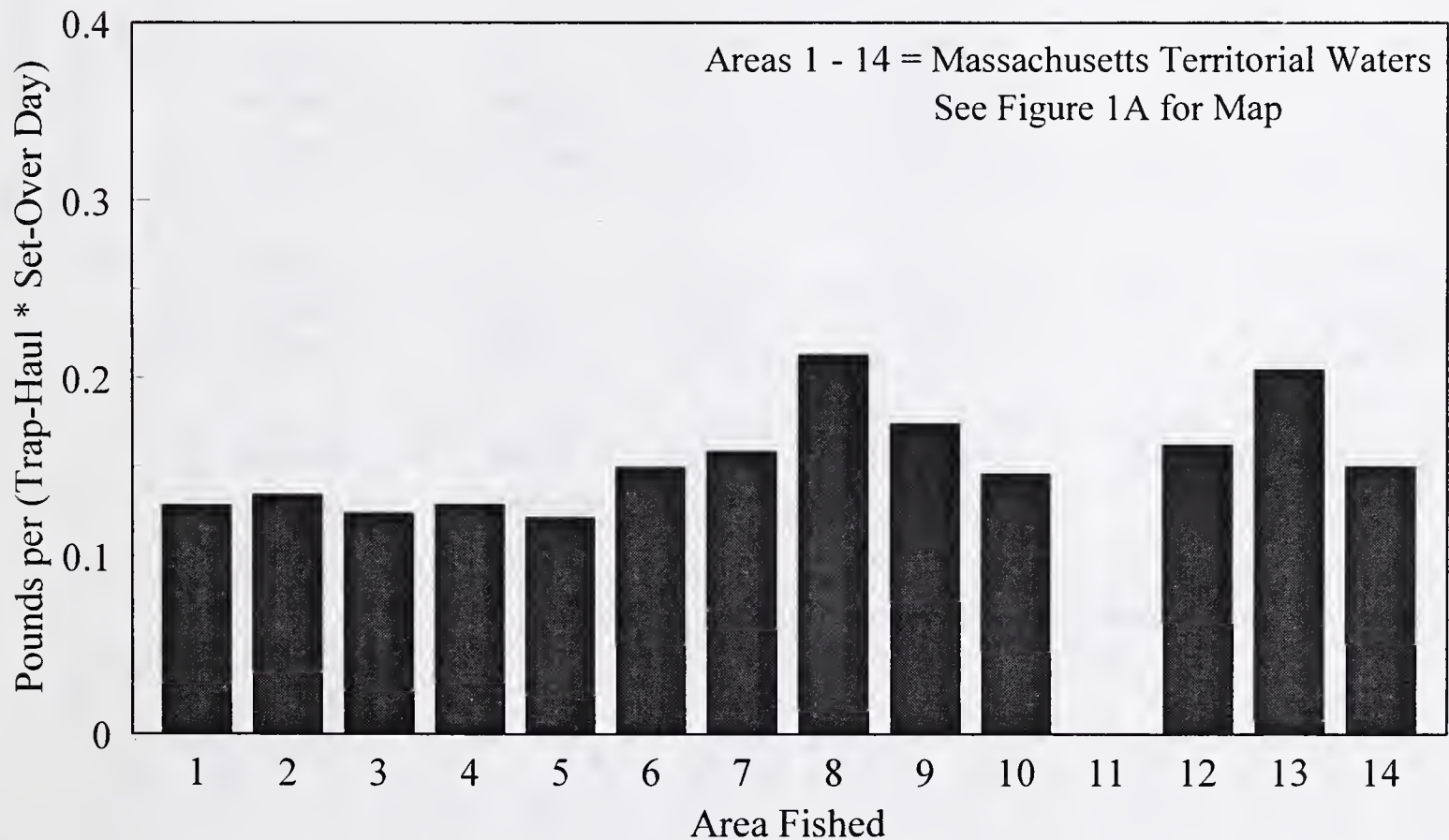


Figure 8. 1998 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for All License Types by Area Fished



FISHING GEAR, VESSELS AND VALUE

In the commercial fishery, traps were valued at \$29,062,366, diving gear at \$83,492 and power and non-power boats at \$69,569,917 yielding a total gear value of \$98,715,775. Combined with the ex-vessel value of lobster sold, \$47,914,649 this gives a total fishery value of \$146,630,424. See Tables 9, 10 and 11.

Overall, 87% of the traps fished in the commercial fishery were wire framed, with 12% being wooden framed and approximately 0.4% categorized as "other". Average value (including warp and buoy) ranged anywhere from \$42.70 to \$110.11 with an average value of \$57.40. See Table 9.

Table 9. 1998 Massachusetts Commercial Lobster Fishery
Trap Types Fished and Value by License Type

	Coastal	Offshore	Seasonal	Total Trap Type	Percent of Total
Wooden Framed Traps	57,878	4,807	77	62,762	12.40%
Value	\$3,120,808	\$456,384	\$4,045	\$3,581,237	
Value/Trap	\$53.92	\$94.94	\$52.67	\$57.06	
Wire Framed Traps	408,352	32,459	759	441,570	87.21%
Value	\$22,620,000	\$2,673,881	\$35,863	\$25,329,744	
Value/Trap	\$55.39	\$82.38	\$47.24	\$57.36	
Other Trap Types	1,021	979	0	2,000	0.39%
Value	\$43,590	\$107,795	\$0	\$151,385	
Value/Trap	\$42.70	\$110.11	\$0.00	\$75.70	
Total for License Type	467,251	38,245	836	506,332	
Value	\$25,784,398	\$3,238,060	\$39,908	\$29,062,366	
Value/Trap	\$55.18	\$84.67	\$47.74	\$57.40	

Value of trap includes warp and buoy. These figures include out-of-state fishermen.

Table 10. 1998 Massachusetts Commercial Lobster Fishery; Number of Fishing Vessels and Pots Fished

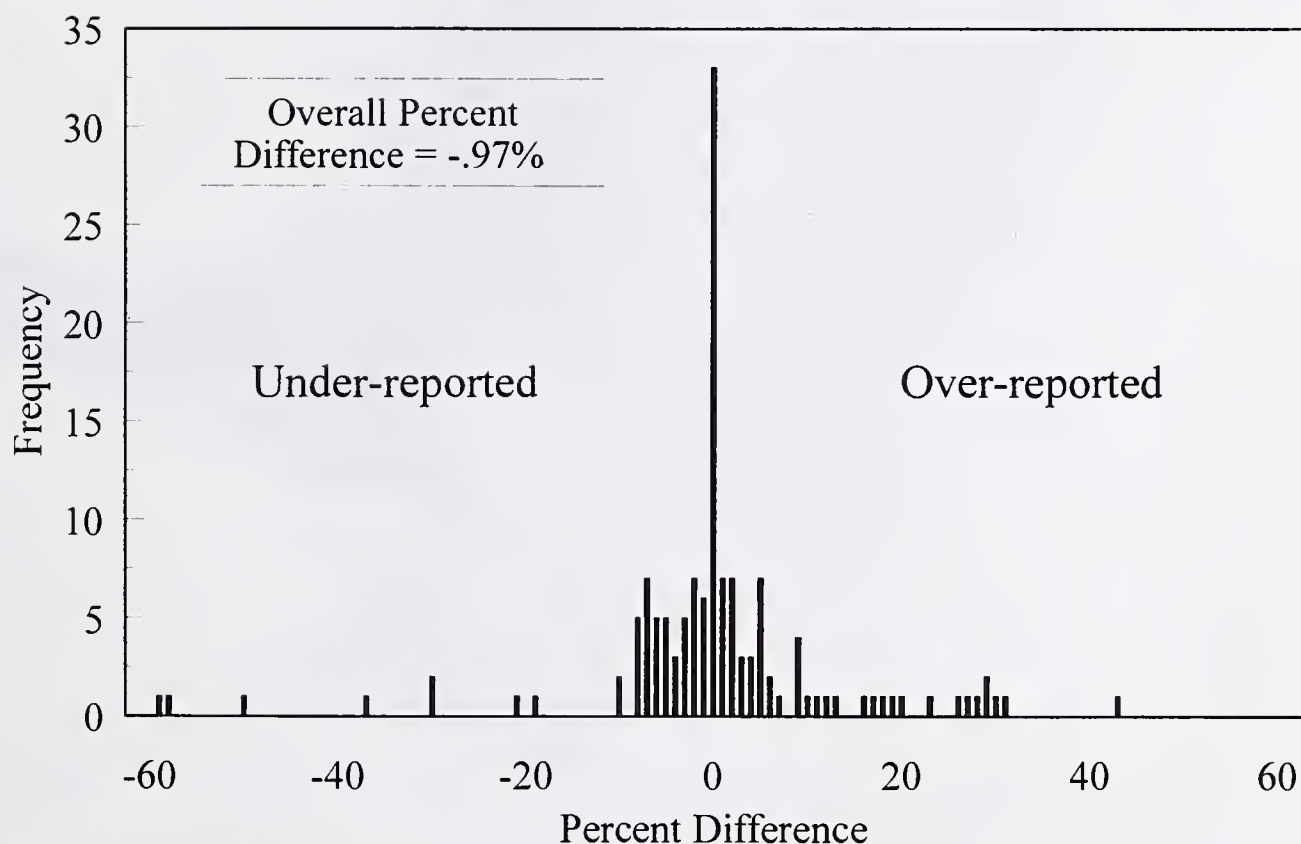
AREA:		TERRITORIAL (Areas 1-14)					NON-TERRITORIAL (Areas 15 - 25)					GRAND TOTAL
LICENSE TYPE: GEAR TYPE:	Diver	COASTAL -----			SEASONAL (Student) Potman	TOTAL TERRITORIAL	COASTAL ---		--- OFFSHORE ---		TOTAL NON- TERRITORIAL	
		Potman	Diver	Trawl/ Gillnet			Potman	Trawl/ Gillnet	Potman	Gillnet		
-- COUNTY -- BARNSTABLE												
Pots Fished	0	52534	2443	0	168	55145	12944	0	8845	0	21789	76934
Power Boat	3	160	9	0	7	179	20	0	7	30	57	236
Non Power Boat	0	37	3	0	1	41	10	0	0	0	10	51
BRISTOL												
Pots Fished	0	19297	0	0	20	19317	12192	0	20171	0	32363	51680
Power Boat	0	66	0	1	1	68	15	0	20	125	160	228
Non Power Boat	0	3	0	0	0	3	0	0	0	0	0	3
DUKES												
Pots Fished	0	4334	0	0	78	4358	1747	0	2175	0	3922	8280
Power Boat	0	24	0	0	4	28	8	1	6	1	16	44
Non Power Boat	0	4	0	0	0	4	0	0	0	0	0	4
ESSEX												
Pots Fished	0	130584	3311	0	338	134233	48134	0	7004	0	55138	189371
Power Boat	2	387	13	1	14	417	56	1	11	59	127	544
Non Power Boat	0	103	1	0	3	107	3	0	0	0	3	110
NANTUCKET												
Pots Fished	0	1057	0	0	39	1096	1058	0	0	0	1058	2154
Power Boat	1	7	0	0	2	10	1	0	0	1	2	12
Non Power Boat	0	1	0	0	0	1	0	0	0	0	0	1
NORFOLK												
Pots Fished	0	15751	0	0	0	15751	3083	0	0	0	3083	18834
Power Boat	0	51	0	0	0	51	2	0	0	0	2	53
Non Power Boat	0	22	0	0	0	22	0	0	0	0	0	22
PLYMOUTH												
Pots Fished	0	103515	1405	0	166	105086	19919	0	350	0	20269	125355
Power Boat	1	297	9	2	7	316	40	4	3	11	58	374
Non Power Boat	0	55	0	0	1	56	4	0	0	0	4	60
SUFFOLK												
Pots Fished	0	30267	0	0	0	30267	1830	0	0	0	1830	32097
Power Boat	1	66	0	0	0	67	0	1	0	21	22	89
Non Power Boat	0	7	0	0	0	7	0	0	0	0	0	7
STATE TOTAL												
Pots Fished	0	357339	7159	0	731	365253	100907	0	38545	0	139452	504705
Power Boat	8	1058	31	4	35	1136	142	7	47	248	444	1580
Non Power Boat	0	232	4	0	5	241	17	0	0	0	17	258
OUT OF STATE												
Pots Fished	0	260	0	0	0	260	0	0	0	0	0	260
Power Boat	0	2	0	0	0	2	0	0	0	8	8	10
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0

VALIDITY OF DATA

Each year 150 coastal license holders are selected for audit and asked to submit the records they used to complete the harvest portion of their catch report. The Division does this to help estimate the amount of error involved in the reporting process. Selection is done randomly except when fishermen fail an audit. In these cases, they are audited again the following year. The audit was first instituted in 1977 for the 1976 catch reports. Over the last five years the lobstermen selected for audit reported landing 7,913,783 pounds. The audit of their records revealed a harvest of 7,921,421 pounds or a difference of -0.96 percent.

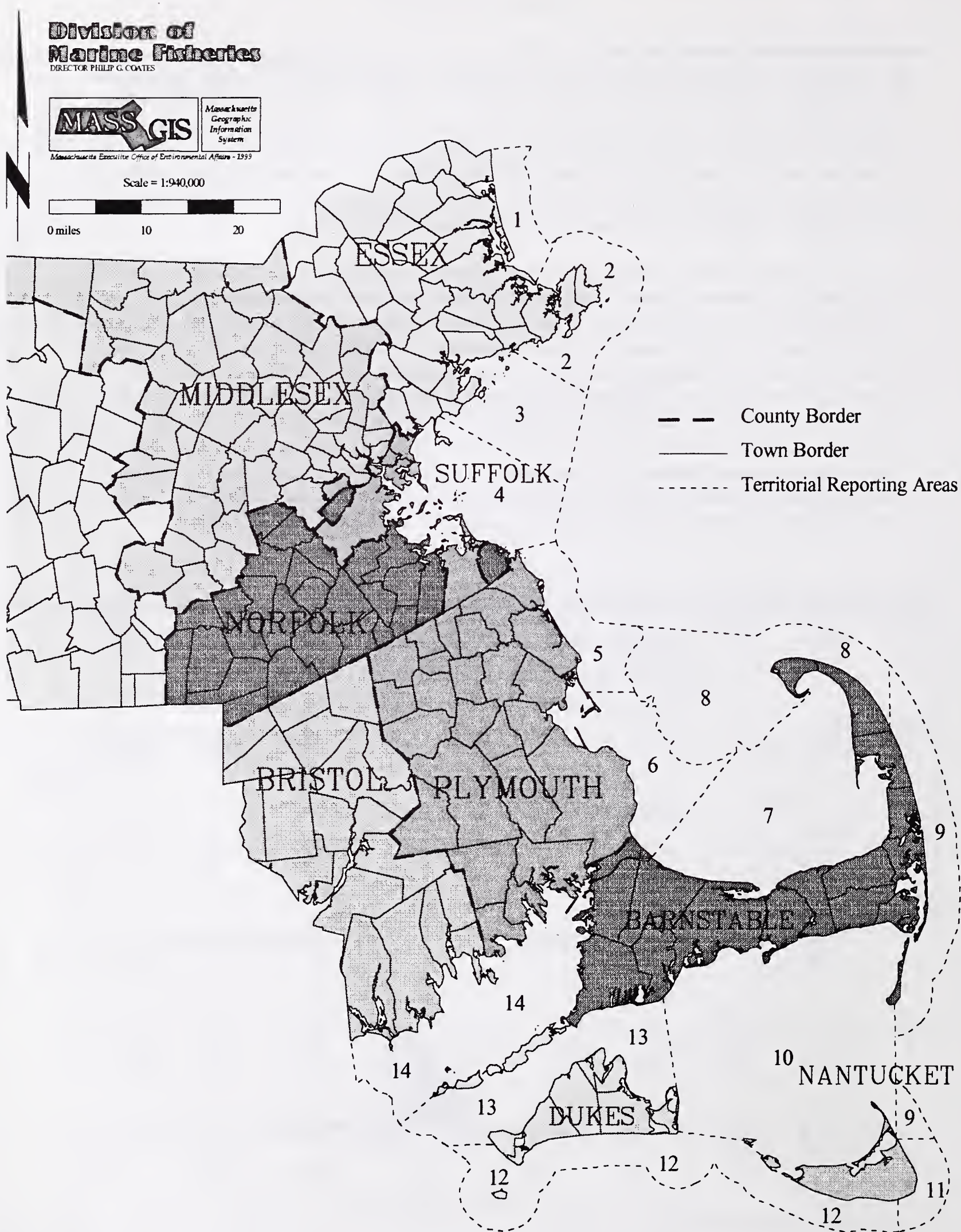
Last year the fishermen selected for audit reported harvesting 1,807,165 pounds of lobster on their 1997 catch reports. The audit of actual records showed total landings of 1,824,679 pounds, a difference of 17,514 pounds or -0.97 percent. Seven of the randomly selected fishermen have yet to respond to the audit request. Figure 9 shows the distribution of the percent difference between the selected fishermen's reported catch and their audited records. In general, reported landings are very well documented by dealer receipts and/or personal records, especially by the so-called "high-liners" in the fishery. Most of the lobstermen have had licenses for several years and know what is required in terms of reporting their fishing activities and have been informed of the value of accurate reporting in the development of management plans. They also know that their reported information is kept strictly confidential and published only in aggregate form. These factors all contribute to a conscientious and responsible reporting constituency.

Figure 9. Massachusetts Commercial Lobster Fishery
Frequency Distribution of the Percent Difference Between
Fishermen's Reported Catch and Their Audited Records



Number of Fishermen Audited = 143

Figure 10. Coastal Map of Massachusetts Showing County Boundaries



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